

DRNT  
Schreiber, David

136391

**From:** Steadman, David (AU1652)  
**Sent:** Tuesday, October 19, 2004 9:07 AM  
**To:** Schreiber, David  
**Subject:** 09/855,750 sequence search request

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**Please search the following sequence(s) in commercial and interference databases:**

- 1) Standard search of SEQ ID NO:1 against nucleic acid databases.
- 2) Standard search of SEQ ID NO:2 against nucleic acid databases.

*Please save results to diskette.*

Thank you very much.

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## IUBMB Enzyme Nomenclature

# EC 6.2.1.3

**Common name:** long-chain-fatty-acid—CoA ligase

**Reaction:** ATP + a long-chain carboxylic acid + CoA = AMP + diphosphate + an acyl-CoA

**Other name(s):** acyl-CoA synthetase; fatty acid thiokinase (long chain); acyl-activating enzyme; palmitoyl-CoA synthase; lignoceroyl-CoA synthase; arachidonyl-CoA synthetase; acyl coenzyme A synthetase; acyl-CoA ligase; palmitoyl coenzyme A synthetase; thiokinase; palmitoyl-CoA ligase; acyl-coenzyme A ligase; fatty acid CoA ligase; long-chain fatty acyl coenzyme A synthetase; oleoyl-CoA synthetase; stearoyl-CoA synthetase; long chain fatty acyl-CoA synthetase; long-chain acyl CoA synthetase; fatty acid elongase; LCFA synthetase; pristanoyl-CoA synthetase; ACS3; long-chain acyl-CoA synthetase I; long-chain acyl-CoA synthetase II; fatty acyl-coenzyme A synthetase; long-chain acyl-coenzyme A synthetase; FAA1

**Systematic name:** acid:CoA ligase (AMP-forming)

**Comments:** Acts on a wide range of long-chain saturated and unsaturated fatty acids, but the enzymes from different tissues show some variation in specificity. The liver enzyme acts on acids from C<sub>6</sub> to C<sub>20</sub>; that from brain shows high activity up to C<sub>24</sub>.

**Links to other databases:** [BRENDA](#), [EXPASY](#), [KEGG](#), [UM-BBD](#), [ERGO](#), CAS registry number: 9013-18-7

### References:

1. Bakken, A.M. and Farstad, M. Identical subcellular distribution of palmitoyl-CoA and arachidonoyl-CoA synthetase activities in human blood platelets. *Biochem. J.* 261 (1989) 71-76. [Medline UI: [89374118](#)]
2. Hosaka, K., Mishima, M., Tanaka, T., Kamiryo, T. and Numa, S. Acyl-coenzyme-A synthetase I from *Candida lipolytica*. Purification, properties and immunochemical studies. *Eur. J. Biochem.* 93 (1979) 197-203. [Medline UI: [79169257](#)]
3. Nagamatsu, K., Soeda, S., Mori, M. and Kishimoto, Y. Lignoceroyl-coenzyme A synthetase from developing rat brain: partial purification, characterization and comparison with palmitoyl-coenzyme A synthetase activity and liver enzyme. *Biochim. Biophys. Acta* 836 (1985) 80-88. [Medline UI: [85280527](#)]
4. Tanaka, T., Hosaka, K., Hoshimaru, M. and Numa, S. Purification and properties of long-chain acyl-coenzyme-A synthetase from rat liver. *Eur. J. Biochem.* 98 (1979) 165-172. [Medline UI: [79236369](#)]

[EC 6.2.1.3 created 1961, modified 1989]

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